UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,290	04/02/2004	Marc Timothy Jones	491442003100	2291

42178 7590 01/04/2007		EXAMINER
EMULEX DESIGN & MANUFACTURING CORPORATION		TRUONG, CAMQUY
C/O MORRISON & FOERSTER LLP		
555 WEST FIFTH STREET, SUITE 3500	ART UNIT	PAPER NUMBER
LOS ANGELES, CA 90013	2195	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)
Office Action Summary	10/817,290	JONES ET AL.
	Examiner	Art Unit	
	Camquy Truong	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>02 April 2004</u>.

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-46</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-8,11-13,15-17,21-29,32-34,36-38 and 42-46</u> is/are rejected.

7) ☒ Claim(s) <u>9-10, 14, 18-20, 30-31, 35, 39-41</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-46 are presented for examination.

2.   It is noted that although the present application does contain line numbers in the specification and claims, the line numbers in the claims do not correspond to the preferred format. The preferred format is to number each line of every claim, with each claim beginning with line 1. For ease of reference by both the examiner and Applicant all future correspondence should include the recommended line numbering.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4.   Claims 15, 36 and 43-46 are rejected under 35 U.S.C 112, second paragraph, as being indefinite for failing to particularly as the invention.

        A.   Claims 43-46 are indefinite because it is unclear whether they are independent or dependent claims.

        B.   Claims 15, and 36, line 4, it is not clearly indicated whether "priority flag resources" refers to "one or more priority flags" in line 2.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1-8, 11-13, 15, 21-29, 32-34, 36, and 42 are rejected under 35 U.S.C.

103(a) as being unpatentable over Flynn et al. (U.S. Patent 5,155,854) in view of Willen

et al. (7,058,949 B1).

7.   As to claims 1, and 22, Flynn teaches the invention substantially as claimed

including: a method for scheduling a plurality of tasks in a processing system having a

plurality of defined resources, comprising:

identifying prerequisites for each task, the prerequisites representing all defined

resources needed for that task to execute to completion (for each command, the

specific set of system resources that are essential to execution of the command are

identified and a table correlating specified commands to corresponding required

resources is generated, col. 14, lines 1-5);

in a task priority order (incoming requests at the ports in order to prioritize them

appropriately for selecting a single request, col. 4, line 61 - col. 5, line 12; col. 11, line

55 - col. 12, line 60; col. 19, lines 42-50), comparing the prerequisites for a particular

task against a system state representing a current state of the defined resources until a

task is identified for which the comparison reveals that the prerequisites for the

identified task are currently available (in order to identify those requests for which all

required resources are available, the two vectors resource require (RR) vector, and

resource available (RA) vector are compared, col. 5, lines 13-24, col. 7, lines 47-56).

8.   Flynn does not explicitly teach dispatching the identified task. However, Lesaint

teaches dispatching the identified task (selecting tasks which are to be scheduled, col.

5, line 66- col. 6, line 2; col. 33, lines 16-17).

9.   It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teaching of Flynn and Lesaint because Lesaint's

dispatching the identified task would improve the efficiency of Flynn's system by

allowing the system to handle rapid changes in the requirements for tasks and the

available resources by using dispatching scheduler system as a result of improving

system' s performance.

10.   As to claims 2-3, 21, 23-24, 42, Flynn teaches:

        identifying one or more priority task paths in a task processing sequence (col. 8,

lines 14-17); and

        arranging the task priority order such that the tasks in the priority task paths have

a higher priority than other tasks (col. 19, lines 42-50).

11.   As to claims 4-5, 25-26 Flynn teaches:

identifying one or more fast paths in a task processing sequence; and for a given fast path (col. 8, lines 14-17),

arranging the task priority order such that the tasks in the given fast path have a higher priority than other tasks17-21).

12.   As to claims 6, 27, Flynn teaches representing each defined resource by one or more resource flags that provide information about that resource (col. 14, line 55 –col. 15, line 7).

13.   As to claims 7, 28, Flynn teaches:

storing the prerequisites for each task as a collection of resource flags known as a prerequisite row (col. 14, lines 34-46) and storing the system state as a collection of resource flags (col. 14, line 55 – col. 15, line 7).

14.   As to claims 8, 29, Flynn teaches comparing the prerequisite row for the particular task against the system state by performing a Boolean AND of the prerequisite row and the system state (col. 15, line 54 – col. 16, line 5).

15.   As to claims 11, 32, Flynn teaches updating the system state after resources are actually used (col. 14, lines 55-60).

16.   As to claims 12-13, 33-34 Flynn teaches after the system state has been

updated, the method further comprises implementing fair-share scheduling by resuming

the comparison of prerequisite rows against the updated system state at a next row in

the prerequisite table (col. 7, lines 51-56; col. 14, lines 41-46).

17.   As to claims 15, 36, Flynn teaches:

        creating one or more priority flags representing various priority levels as defined

resources in the processing system (col. 13, lines 6-42); and

        adding priority flag resources to the prerequisites of selected tasks in accordance

with priority levels desired for those tasks (col. 14, lines 19-33);

wherein the priority flag resources effectively change the task priority order as the

prerequisites for the selected tasks are compared against the system state (col. 14,

lines 19-54).

18.   Claims 16-17, 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Flynn et al. (U.S. Patent 5,155,854) in view of Willen et al. (7,058,949 B1), as

applied as claim 1 above, and further in view of Blythe et al. (U.S. Publication

2004/0136434 A1).

19.   As to claims 16-17, and 37-38, Flynn and Willen do not explicitly teach changing

a depth of one or more queues/ buffers to alter the scheduling of tasks having those

queues as prerequisites. However, Blythe teaches changing a depth of one or more

queues/buffers to alter the scheduling of tasks having those queues as prerequisites

(changing the size of a pool or changing the number of pools will many times affect the

execution time (shorter amounts of execution time to spend less time waiting to

execute) of the requests directed to the pools (paragraph 42, lines 15-17; paragraph 18,

lines 1-3).

20.   It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teaching of Flynn, Lesaint and Blythe because

Blythe's changing the size of a pool would changing the time waiting to execute

(schedule) of the requests would improve the efficiency of Flynn and Lesaint's system to

improve the techniques for scheduling requests to threads from thread pools.

21.   Claims 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Flynn et al. (U.S. Patent 5,155,854) in view of Willen et al. (7,058,949 B1), as applied to

claim 22 above, and further in view of Applicant Admit Prior Art (AAPA).

22.   As to claims 43-45, Flynn and Willen do not explicitly teach the HBA further

comprising an Internet Small Computer System Interface (iSCSI) or fibre channel (FC)

controller circuit. However, AAPA teaches HBA further comprising an Internet Small

Computer System Interface (iSCSI) or fibre channel (FC) controller circuit (page 1, line

13 – page 2, line 3).

23.   It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teaching of Flynn, Lesaint and AAPA because

AAPA's HBA further comprising an Internet Small Computer System Interface (iSCSI) or

fibre channel (FC) controller circuit would allow lead to better system performance.

24.   As to claim 46, AAPA teaches an iSCSI or a FC network is coupled to the iSCSI

or FC controller circuit, respectively, and one or more storage devices are coupled to

the iSCSI or FC network (page 2, lines 1-3; and lines 14-17).

Allowable Subject Matter

25.   Claims 9-10, 14, 18-20, 30-31, 35, 39-41 are objected to as being dependent

upon a rejected base claim, but would be allowable if rewritten in independent form

including all of the limitations of the base claim and any intervening claims.

Conclusion

26.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Camquy Truong whose telephone number is (571) 272-

3773. The examiner can normally be reached on 8:00Am – 5:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-3756.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR of Public PAIP. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

have questions on access to the Private PAIP system, contact the Electronic Business

Center (EBC) at 866-217-9197(toll-free).

Camquy Truong

December 4, 2006

/MENG-AI TAN/
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100